AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An expansion valve for arrangement in a refrigerant circuit of a refrigerating apparatus, the expansion valve comprising:

a valve chamber;

an inlet, formed in the valve chamber and connected to an upstream refrigerant pipe, for drawing a refrigerant flow into the valve chamber;

an outlet, formed in the valve chamber and connected to a downstream refrigerant pipe, for discharging the refrigerant flow from the valve chamber;

a refrigerant passage formed between the inlet and outlet in the valve chamber;

an orifice for variably controlling the flow rate of the refrigerant flow in the refrigerant passage; and

a turbulent portion formed in the inner surface of the valve chamber for causing turbulence in the refrigerant flow in the refrigerant passage upstream of the orifice.

2. (Original) The expansion valve according to claim 1, wherein the orifice includes a valve seat, which is formed in the valve chamber and has a valve hole, and a valve element for adjusting an open amount of the valve hole.

3. (Currently Amended) ~~The~~ An expansion valve ~~according to claim 2, wherein the turbulent portion is formed by ridges and valleys in either one of an~~ for arrangement in a refrigerant circuit of a refrigerating apparatus, the expansion valve comprising:

a valve chamber;

an inlet, formed in the valve chamber and connected to an upstream refrigerant pipe, for drawing a refrigerant flow into the valve chamber;

an outlet, formed in the valve chamber and connected to a downstream refrigerant pipe, for discharging the refrigerant flow from the valve chamber;

a refrigerant passage formed between the inlet and outlet in the valve chamber;

an orifice for variably controlling the flow rate of the refrigerant flow in the refrigerant passage where the orifice includes a valve seat, which is formed in the valve chamber and has a valve hole, and a valve element for adjusting an open amount of the valve hole; and

a turbulent portion formed upstream and downstream of the valve seat in the refrigerant passage for causing turbulence in the refrigerant flow in the refrigerant passage upstream and downstream of the orifice;

wherein the valve element and the valve chamber are formed upstream and downstream of the valve seat in the refrigerant passage, the turbulent portion is formed in an inner wall surface of each of the valve ~~chamber~~ chambers or an outer surface of each of the valve ~~element.~~ elements, and the two valve elements are connected by a shaft extending through the valve hole of the valve seat.

4. (Canceled)

5. (Currently Amended) The expansion valve according to ~~claim 3~~claim 1, wherein the turbulent portion is a spiral groove~~formed in the inner surface of the valve chamber~~.

6. (Currently Amended) The expansion valve according to ~~claim 4 or 5~~claim 3, wherein the turbulent portion is a spiral groove.

7. (Currently Amended) An ~~The~~ expansion valve for arrangement in a refrigerant circuit of a refrigerating apparatus, the expansion valve comprising: ~~according to claim 1, wherein~~

a valve chamber;

an inlet, formed in the valve chamber and connected to an upstream refrigerant pipe, for drawing a refrigerant flow into the valve chamber;

an outlet, formed in the valve chamber and connected to a downstream refrigerant pipe, for discharging the refrigerant flow from the valve chamber;

a refrigerant passage formed between the inlet and outlet in the valve chamber;

an orifice for variably controlling the flow rate of the refrigerant flow in the refrigerant passage where the orifice includes a valve seat, which is formed in the valve chamber and has a valve hole, and a valve element for adjusting an open amount of the valve hole; and

~~the~~ a turbulent portion for causing turbulence in the refrigerant flow in~~is formed by a meandering passage formed by meandering~~ the refrigerant passage upstream of the orifice defined by a meandering refrigerant passage upstream of the orifice between the valve element and the valve seat where the meandering refrigerant passage includes an axial passage, which guides the refrigerant flow in an axial direction of the valve element between the valve element and a wall surface of the valve chamber, and an oblique passage, which obliquely changes the direction of the refrigerant flow from the axial passage;

wherein the valve element has a distal end having a needle valve in the center of the valve element and a recess portion defined between a center point of the needle valve and an outer surface of the valve element and the valve seat defined by a projection towards the valve element.

8. (Canceled)

9. (Currently Amended) The expansion valve according to ~~claim 8~~claim 7, wherein the oblique passage is formed by a recess formed in a distal surface of the valve element and a projection formed in the valve seat, the recess and the projection having opposed, spaced surfaces extending substantially parallel to each other.

10. (Previously Presented) The expansion valve according to claim 1, wherein the turbulent portion includes a gap for varying a cross-sectional area of the refrigerant passage.

11. (Previously Presented) The expansion valve according to claim 1, wherein the refrigerant passage includes a gap enlarging a passage cross-sectional area between the turbulent portion and the orifice.

12. (Previously Presented) The expansion valve according to claim 1, wherein the turbulent portion is formed upstream and downstream of the valve seat in the refrigerant passage.

13. (Original) The expansion valve according to claim 12, wherein the valve element and the valve chamber are formed upstream and downstream of the valve seat in the refrigerant passage, the turbulent portion is formed in an inner wall surface of each of the valve chambers or an outer surface of each of the valve elements, and the two valve elements are connected by a shaft extending through the valve hole of the valve seat.

14. (Currently Amended) A refrigerating apparatus employing the expansion valve according to ~~any one of the claims 1 to 5 and 7 to 13~~claim 1.

15. (New) The expansion valve according to claim 3, wherein the turbulent portion includes a gap for varying a cross-sectional area of the refrigerant passage.

16. (New) The expansion valve according to claim 7, wherein the turbulent portion includes a gap for varying a cross-sectional area of the refrigerant passage.

17. (New) The expansion valve according to claim 3, wherein the refrigerant passage includes a gap enlarging a passage cross-sectional area between the turbulent portion and the orifice.

18. (New) The expansion valve according to claim 7, wherein the turbulent portion is formed upstream and downstream of the valve seat in the refrigerant passage.

19. (New) The expansion valve according to claim 18, further comprising:

the valve element and the valve chamber are formed upstream and downstream of the valve seat in the refrigerant passage and the two valve elements are connected by a shaft extending through the valve hole of the valve seat; and

a turbulent portion for causing turbulence in the refrigerant flow in the refrigerant passage upstream and downstream of the orifice is defined by a meandering passage formed by meandering the refrigerant passage upstream and downstream of the orifice between the valve element and the valve seat;

wherein the meandering passage includes an axial passage, which guides the refrigerant flow in an axial direction of the valve element between the valve element and a wall surface of the valve chamber, and an oblique passage, which obliquely changes the direction of the refrigerant flow from the axial passage.

20. (New) A refrigerating apparatus employing the expansion valve according to claim 3.

21. (New) A refrigerating apparatus employing the expansion valve according to claim 7.